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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,548	07/10/2003	Leo Baldwin	ESI-144-B	2806

7590 09/25/2006

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EXAMINER

STAFIRA, MICHAEL PATRICK

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application N .	Applicant(s)	
	10/616,548	BALDWIN ET AL.	
	Examiner	Art Unit	
	Michael P. Stafira	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on amendment filed 7/6/2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-4, 12, 15, 16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Merely determining a nominal illumination angle would not appear to be sufficient to constitute a tangible result, since the outcome of the determining step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. See OG Notices: 22 November 2005, "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility".

Dependent claims 2-4, 12, 15, 16 are rejected because they hold the same deficiencies as the rejected independent claim in the above paragraph.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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2. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Dana (2002/0080357).

**Claim 1**

Dana (2002/0080357) discloses determining a nominal illumination angle (Bidirectional reflectance distribution function) for the object (Para. 0041); positioning a light source (Fig. 1, Ref. 20, 70) at an angle complimentary to the nominal illumination angle of the object (Fig. 1, Ref. 14; Para. 0053).

**Claim 2**

Dana (2002/0080357) further discloses the nominal illumination angle is empirically determined (Para. 0059).

**Claim 3**

Dana (2002/0080357) further discloses the nominal illumination angle is mathematically determined (Para. 0059).

**Claim 4**

The reference of Dana (2002/0080357) A1 further discloses the light source is positioned to subtend less than the entire object (Para. 0036).

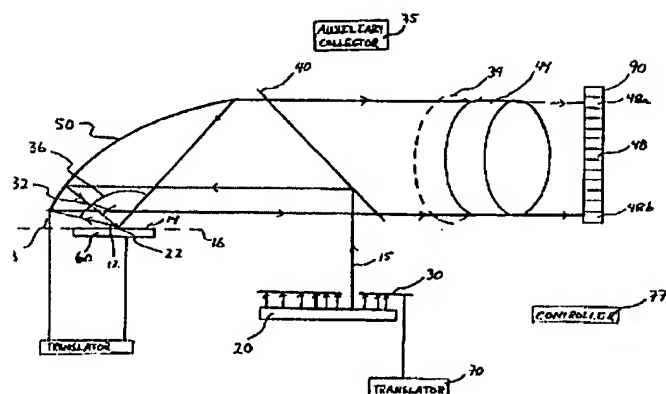
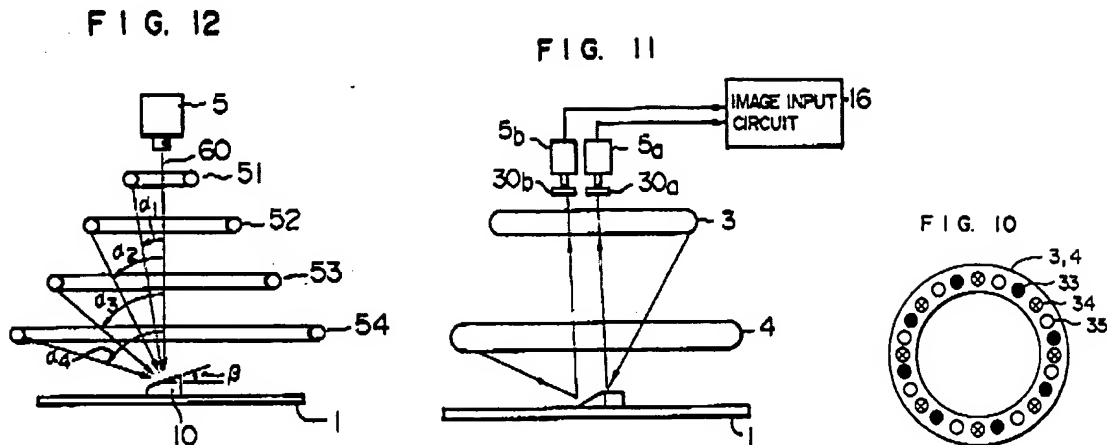


FIG. 1

3. Claims 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Takagi et al. ('985).

#### Claim 5

Takagi et al. ('985) discloses a plurality of discrete light sources (Fig. 12, Ref. 51, 52, 53, 54) arranged in two dimensions and positioned at an angle complementary to the nominal illumination angle (Col. 4, lines 1-31). It is further the position of the examiner that every object illuminated has a nontrivial bi-directional reflectance distribution function and that the reference of Takagi et al. ('985) positions the light sources (Fig. 12, Ref. 51-54) at that nominal illumination angle so as to receive accurate detection signals, therefore Takagi et al. ('985) reads on the claimed invention.



**Claim 6**

Takagi et al. ('985) further discloses the discrete light sources are LEDs (Page 8, lines 38-46).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al. ('985) in view of Luk (2002/0181231).

**Claim 7**

Takagi et al. ('985) substantially teaches the claimed invention except that it does not show LEDs mounted to a circuit board in the shape of a cone. Luk (2002/0181231) shows that it is known to provide a circuit board with LEDs in the shape of a cone (Page 12, Para.0162) for an

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optical illumination device. It would have been obvious to combine the device of Takagi et al. ('985) with the cone shaped LEDs of Luk (2002/0181231) for the purpose of providing a illumination device that covers multiple illuminations angles, therefore providing proper illumination of different size objects which increases the accuracy of the measurements.

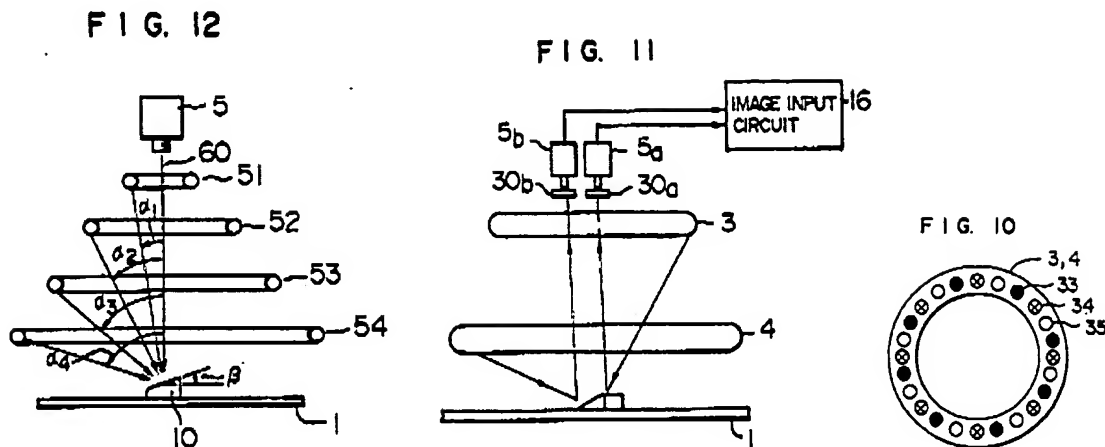
#### **Claim 8**

Takagi et al. ('985) substantially teaches the claimed invention except that it does not show LEDs mounted to at least two rigid circuit boards. Luk (2002/0181231) shows that it is known to provide LEDs mounted to two rigid circuit boards (Page 16, Para. 0183) for an optical illumination device. It would have been obvious to combine the device of Takagi et al. ('985) with the LEDs mounted on circuit boards of Luk (2002/0181231) for the purpose of providing a secure and stable platform for mounting LEDs, which decreases the amount of maintenance needed in operating the LEDs.

6. Claims 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Takagi et al. ('985).

#### **Claim 9**

Takagi et al. ('985) discloses a two-dimensional light sources (Fig. 12, Ref. 51, 52, 53, 54) positioned at an angle complementary to the nominal illumination angle (Col. 4, lines 1-31). It is further the position of the examiner that every object illuminated has a nontrivial bi-directional reflectance distribution function and that the reference of Takagi et al. ('985) positions the light sources (Fig. 12, Ref. 51-54) at that nominal illumination angle so as to receive accurate detection signals, therefore Takagi et al. ('985) reads on the claimed invention.



**Claim 10**

Takagi et al. ('985) discloses the light source is a two dimensional collection of LEDs (Page 8, lines 38-46).

7. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al. ('985) in view of Luk (2002/0181231).

**Claim 11**

Takagi et al. ('985) substantially teaches the claimed invention except that it does not show LEDs mounted to a circuit board in the shape of a cone. Luk (2002/0181231) shows that it is known to provide a circuit board with LEDs in the shape of a cone (Page 12, Para.0162) for an optical illumination device. It would have been obvious to combine the device of Takagi et al. ('985) with the cone shaped LEDs of Luk (2002/0181231) for the purpose of providing a illumination device that covers multiple illuminations angles, therefore providing proper illumination of different size objects which increases the accuracy of the measurements.



8. Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dana (2002/0080357).

**Claim 12**

Dana (2002/0080357) in view of discloses the claimed invention except for positioning lens arrangement along a line perpendicular to the surface of the object. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Dana (2002/0080357) with lens arrangement since it was well known in the art that using a lens arrangement directs the input light beam to the detector which decreases the amount of light loss to the detector.

9. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al. ('985) in view of Luk (2002/0181231).

**Claim 13**

Takagi et al. ('985) substantially teaches the claimed invention except that it does not show the light sources are positioned about a line perpendicular to a surface of the object and a lens arrangement is located symmetrically about the line side of the light sources. Luk (2002/0181231) shows that it is known to provide a plurality of light source perpendicular to a surface of the object with a lens about the line side of the light sources (See Figure 9) for an optical illumination system. It would have been obvious to combine the device of Takagi et al. ('985) with the illumination arrangement of Luk (2002/0181231) for the purpose of providing a illumination device that covers multiple illuminations angles, therefore providing proper illumination of different size objects which increases the accuracy of the measurements.

10. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al. ('985).

**Claim 14**

Takagi et al. ('985) in view of discloses the claimed invention except for positioning lens arrangement along a line perpendicular to the surface of the object. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Takagi et al. ('985) with lens arrangement since it was well known in the art that using a lens arrangement directs the input light beam to the detector which decreases the amount of light loss to the detector.

11. Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dana (2002/0080357).

**Claim 15**

Dana (2002/0080357) discloses positioning the light source at angle complementary to the nominal illumination angle of the object (Para. 0053).

Dana (2002/0080357) discloses the claimed invention except for using a plurality of light devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Dana (2002/0080357) with the plurality of light devices since it was well known in the art that using a plurality of light devices increases the illumination coverage of the lighting device therefore increasing the sensitivity of the measurement.

12. Claims 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Dana (2002/0080357).

**Claim 16**

Dana (2002/0080357) further discloses measuring an angle from a plane normal to the object (Para. 0045).

***Response to Arguments***

13. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Michael P. Stafira  
Primary Examiner  
Art Unit 2877

September 8, 2006